

FIG. 1
PRIOR ART

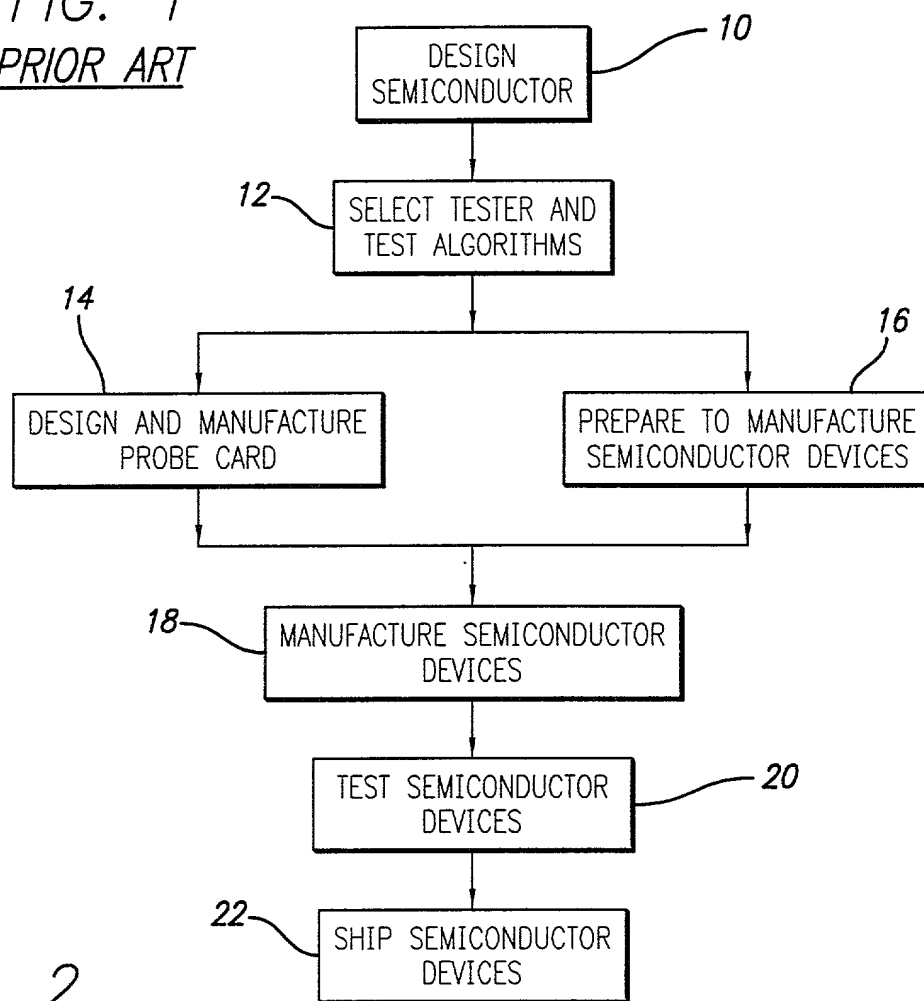


FIG. 2
PRIOR ART

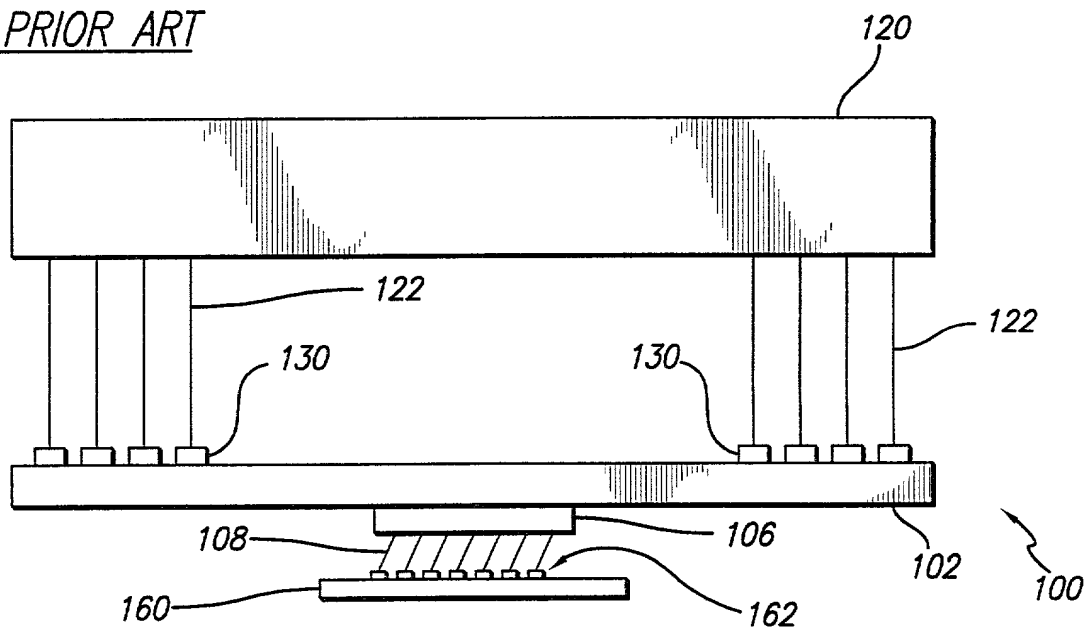


FIG. 3
PRIOR ART

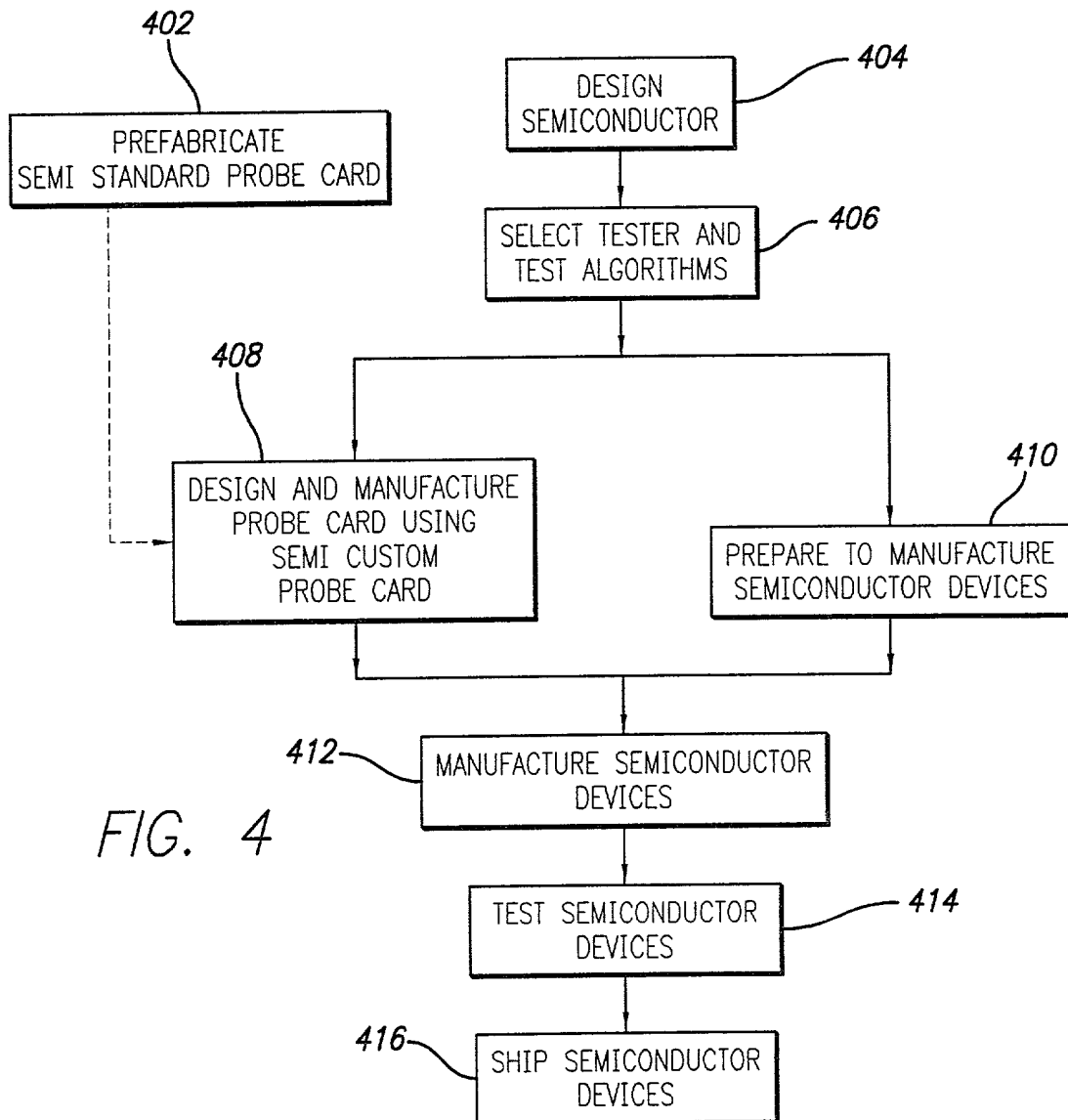
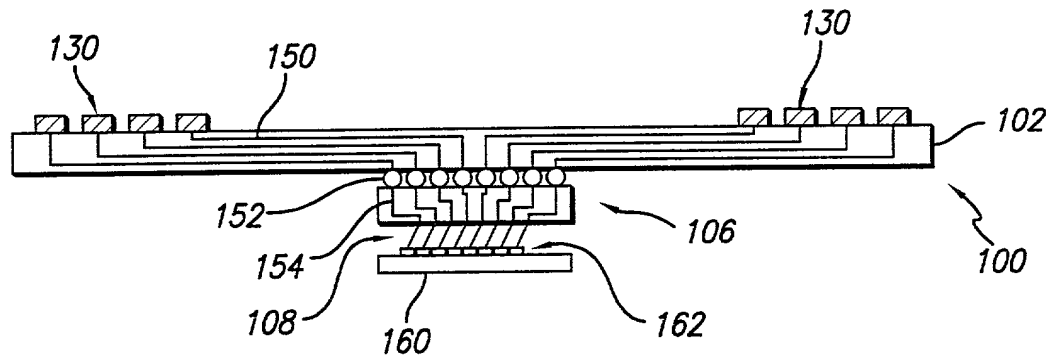


FIG. 5

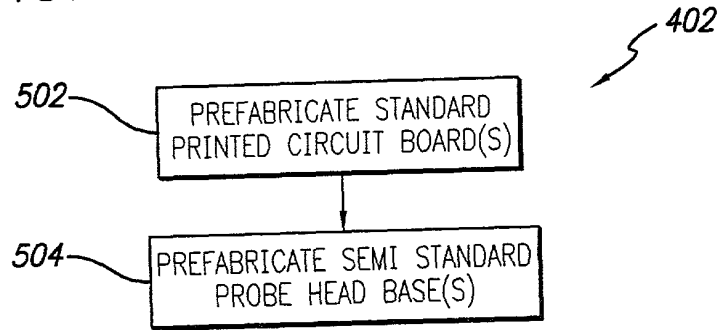


FIG. 6

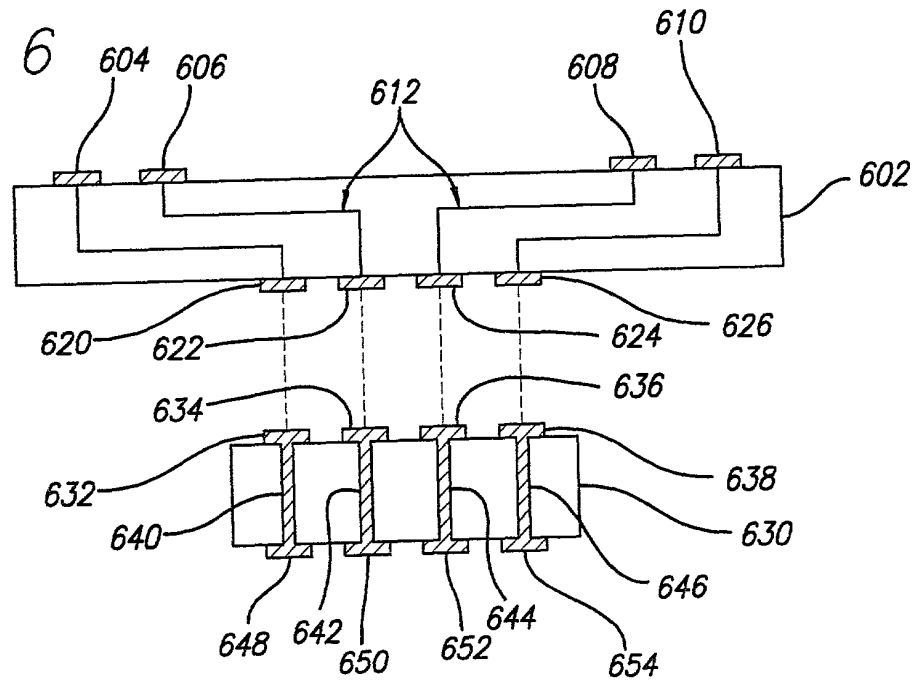


FIG. 8A

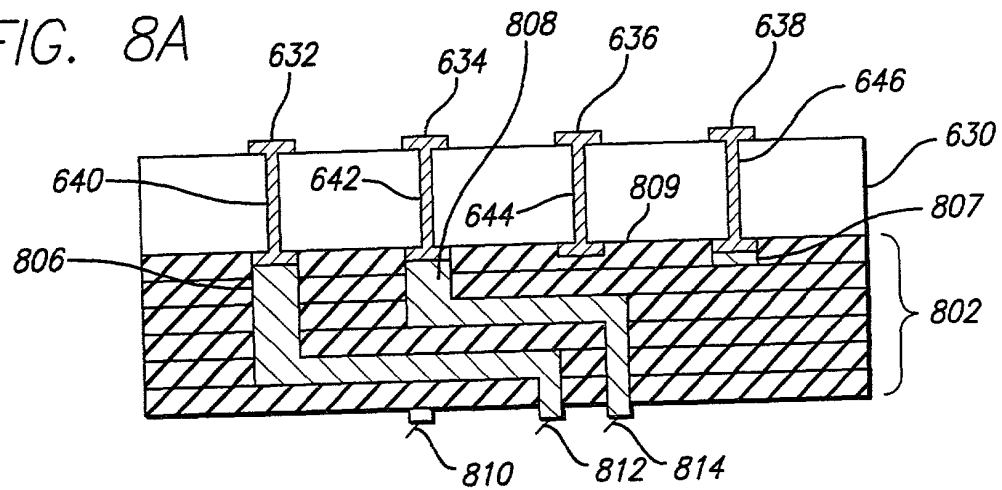


FIG. 7

408

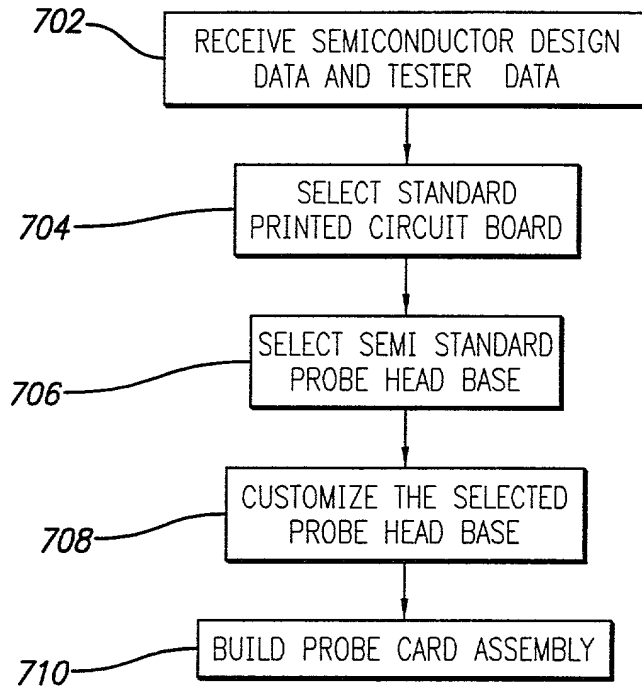
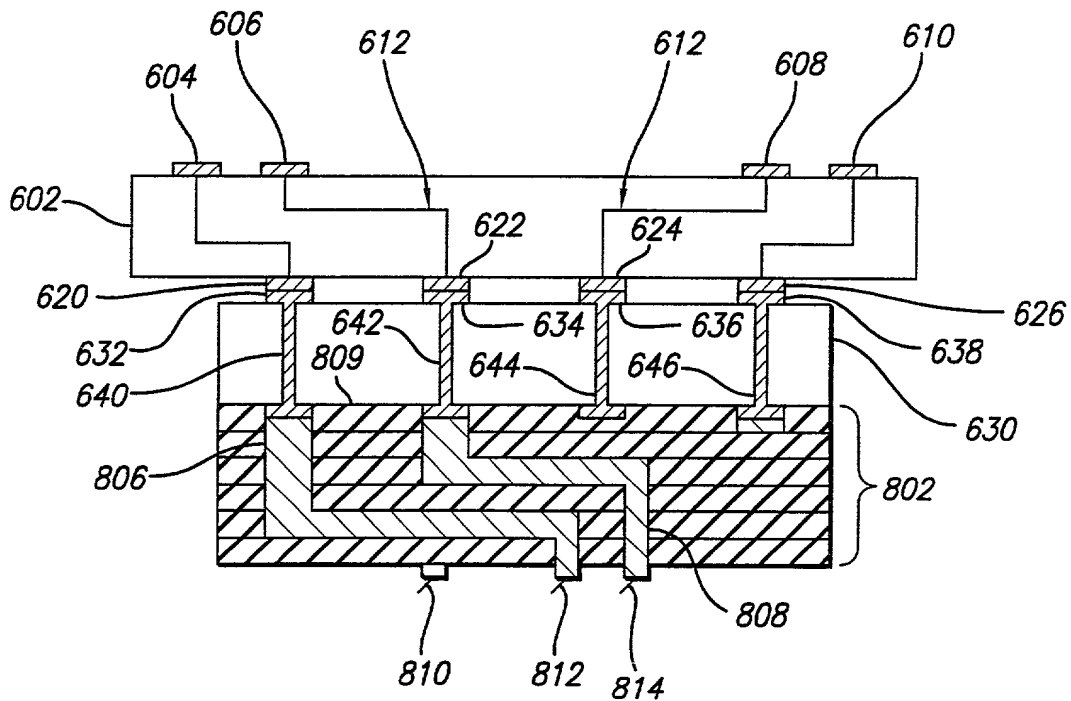


FIG. 8B



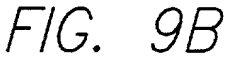
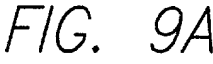


FIG. 10A

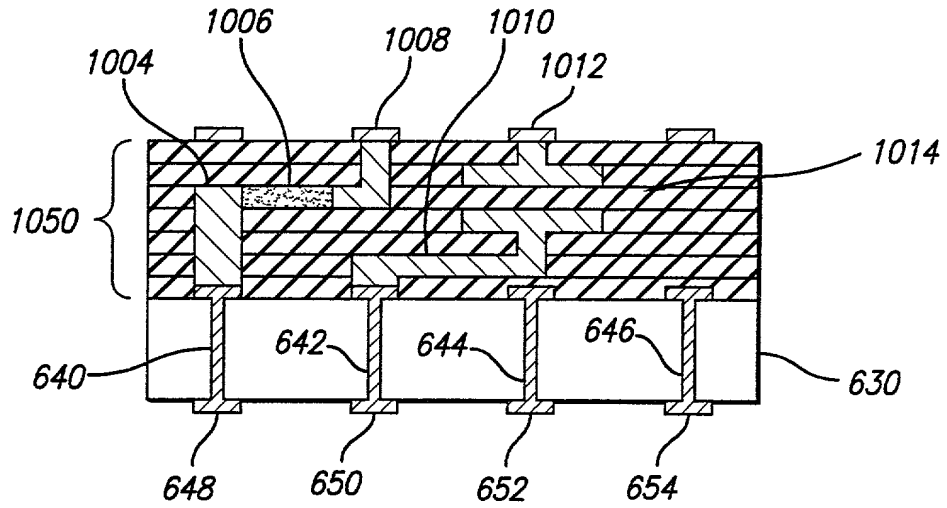


FIG. 10B

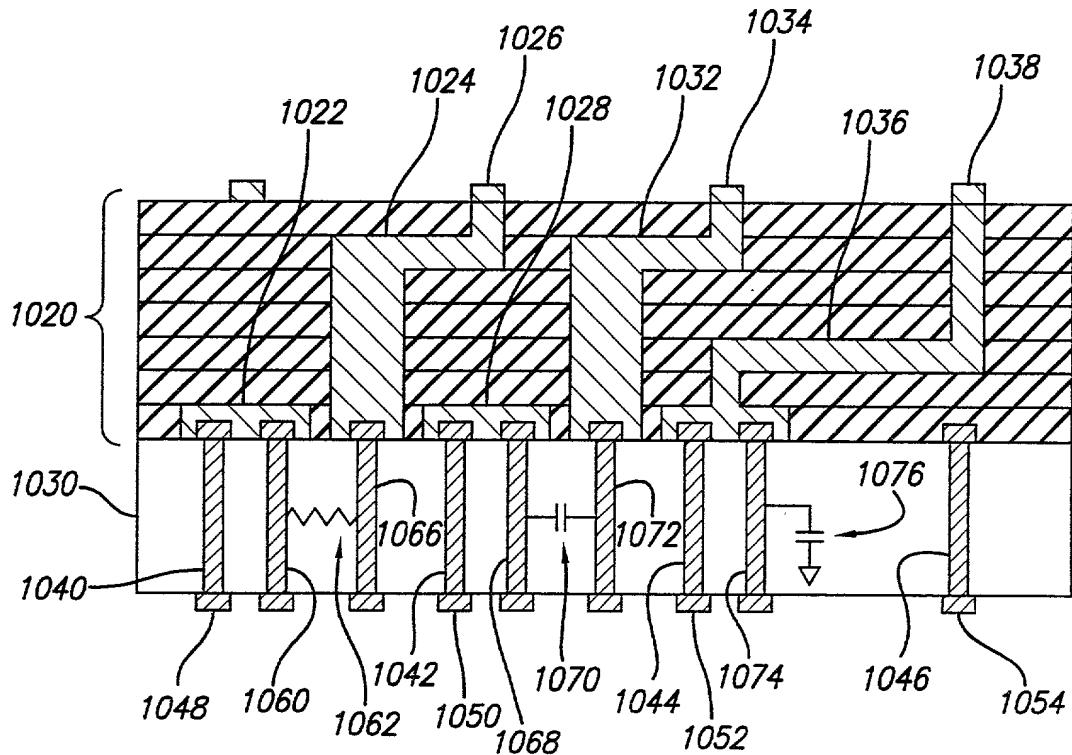


FIG. 11A

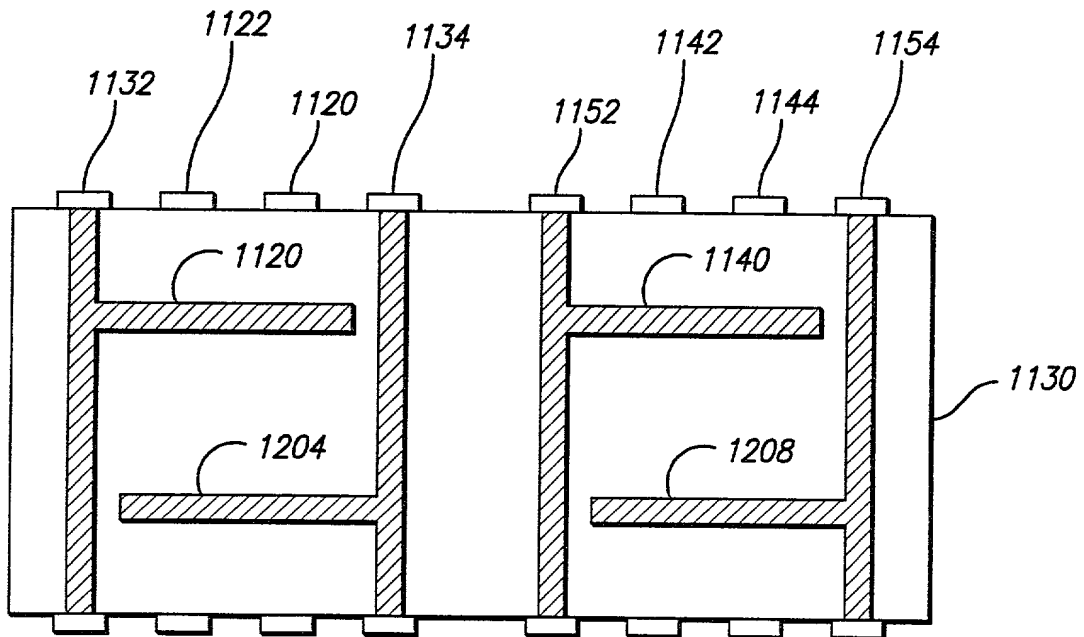
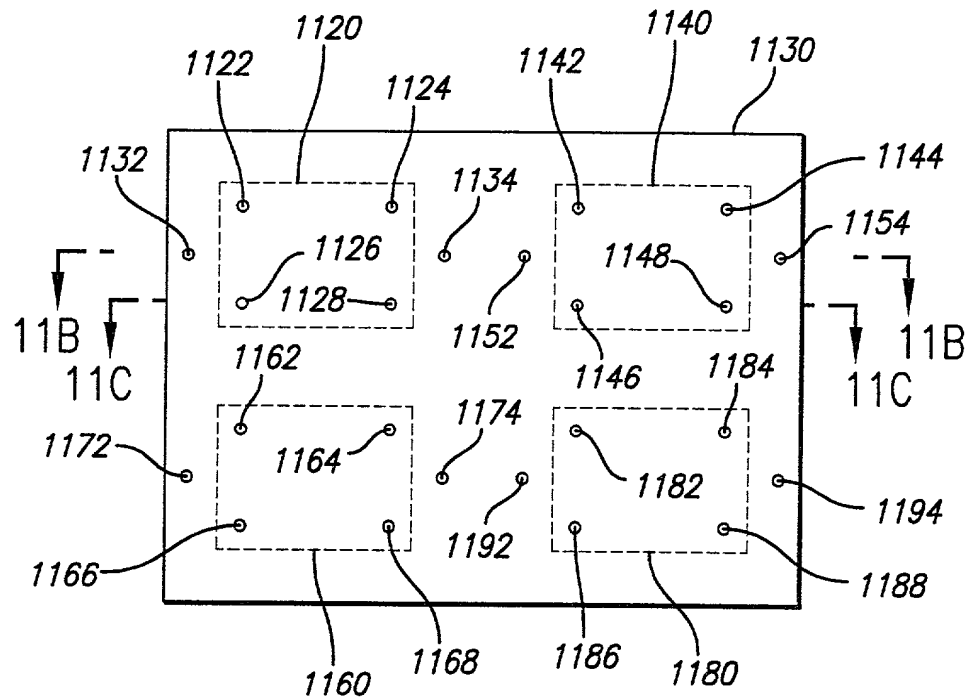


FIG. 11B

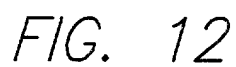
[illegible]

FIG. 13A

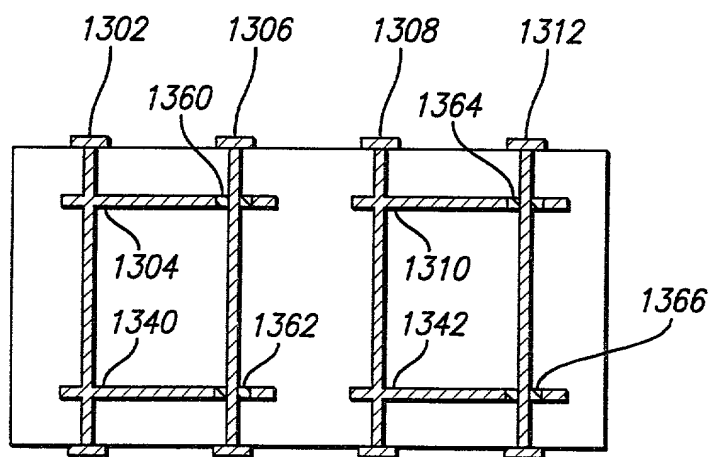
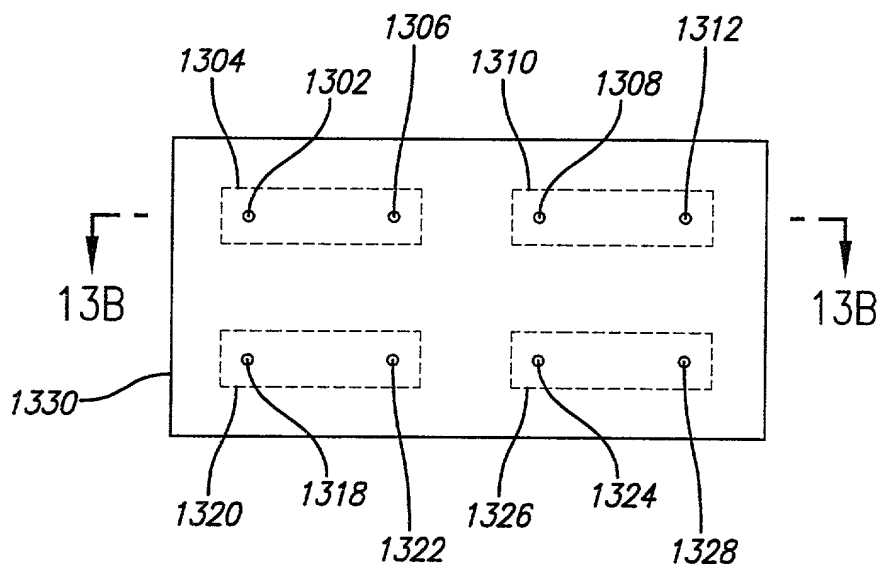


FIG. 13B

FIG. 14

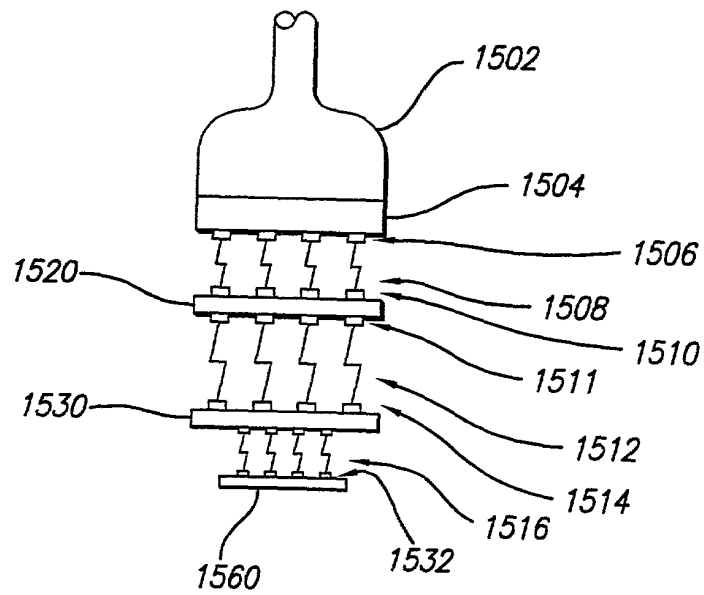
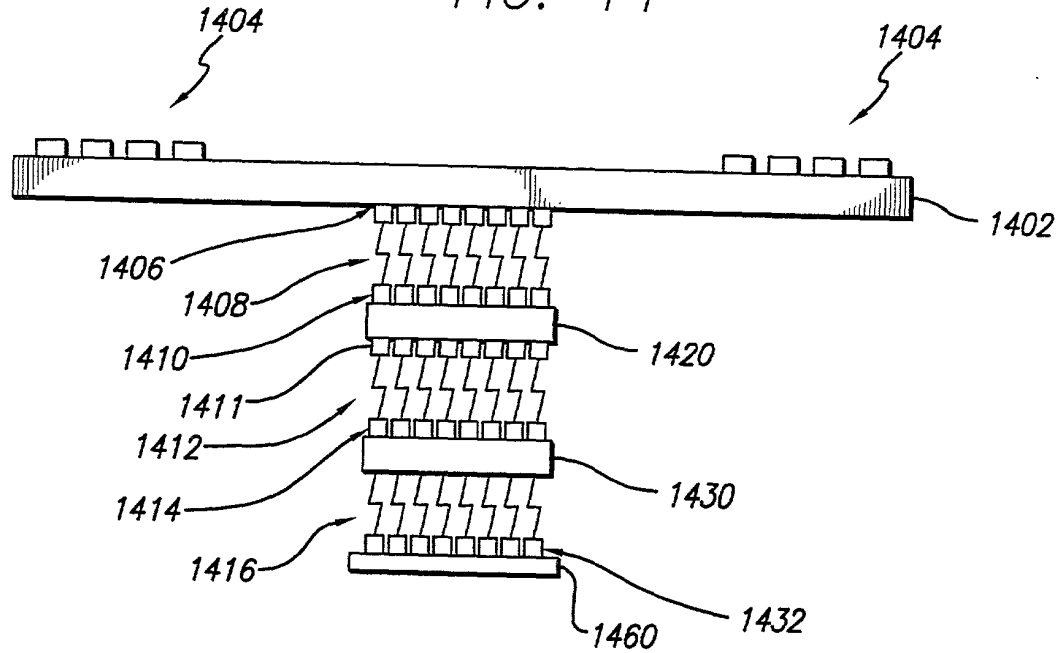
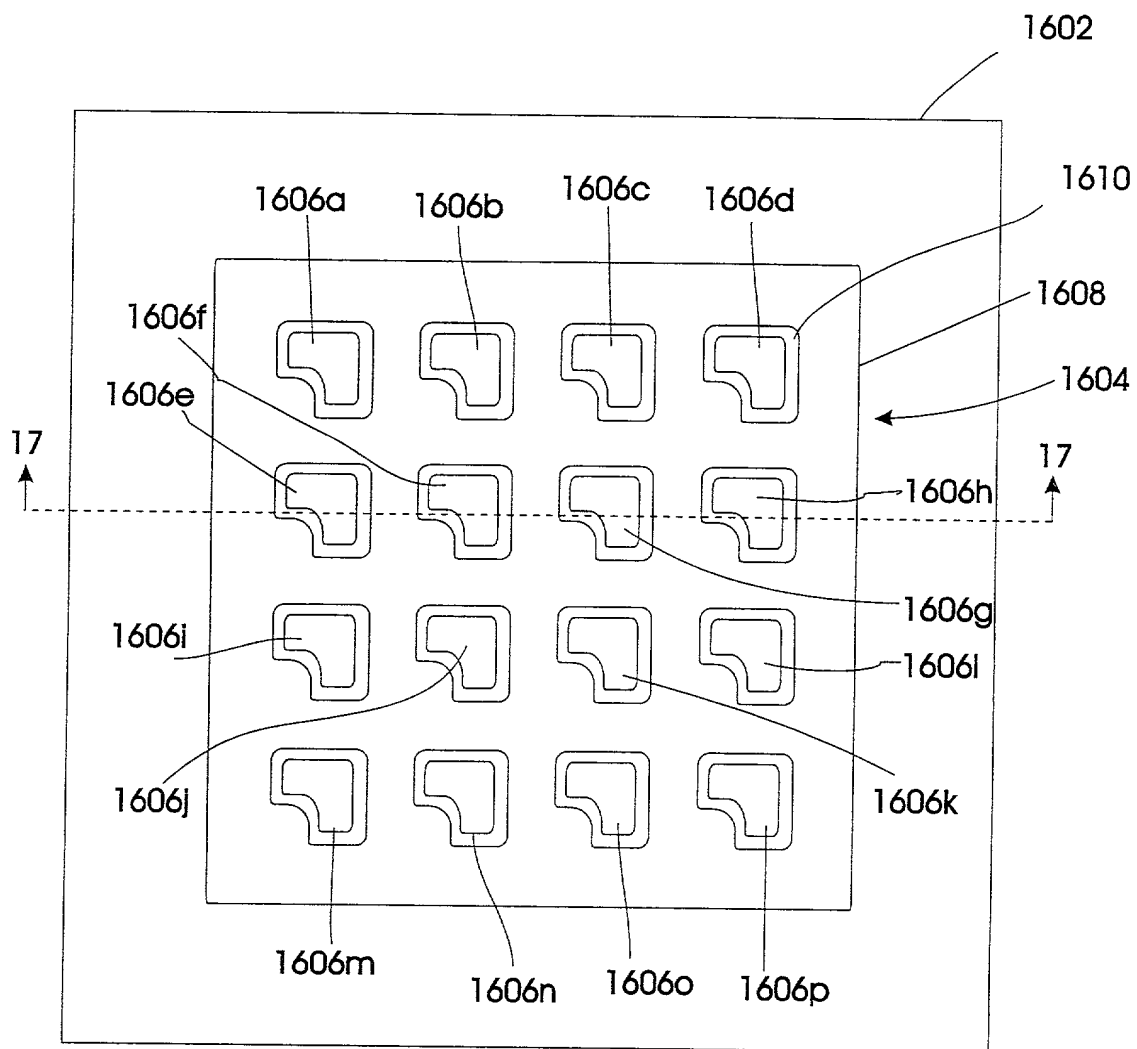


FIG. 15

Figure 16



A detailed cross-sectional view of a semiconductor device 1600. The device features a substrate 1602 with a series of vertical pillars 1608. The pillars are separated by a material 1610. The top surface of the pillars is covered by a layer 1606, which is further covered by a layer 1604. The bottom surface of the pillars is covered by a layer 1618. The pillars are connected to a bottom layer 1622. The pillars are also connected to a top layer 1624. The pillars are connected to a bottom layer 1626. The pillars are connected to a top layer 1628. The pillars are connected to a bottom layer 1612e, 1612f, 1612g, and 1612h. The pillars are connected to a top layer 1616. The pillars are connected to a bottom layer 1620. The pillars are connected to a top layer 1618. The pillars are connected to a bottom layer 1622. The pillars are connected to a top layer 1624. The pillars are connected to a bottom layer 1626. The pillars are connected to a top layer 1628.

Figure 18

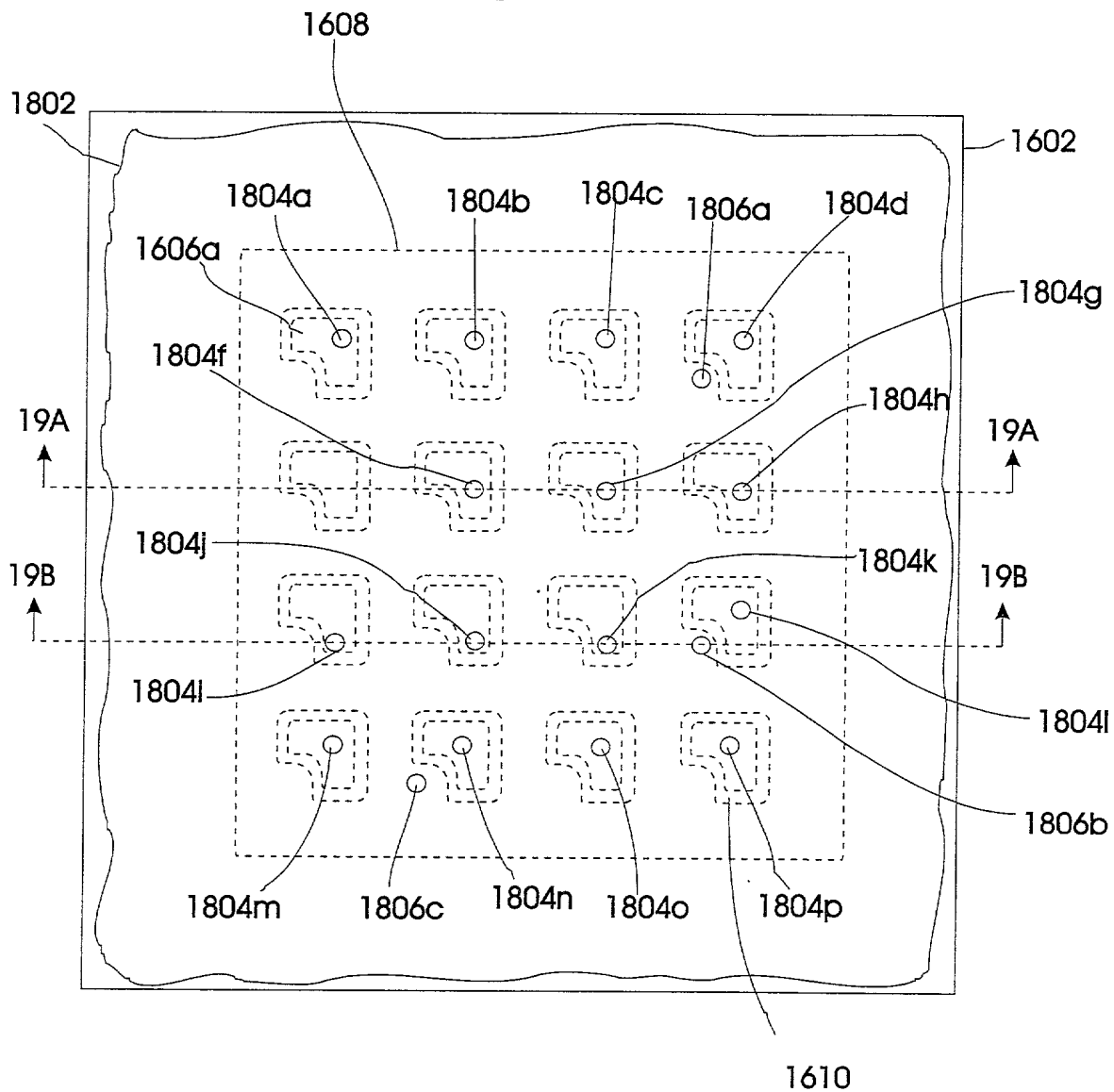


Figure 20

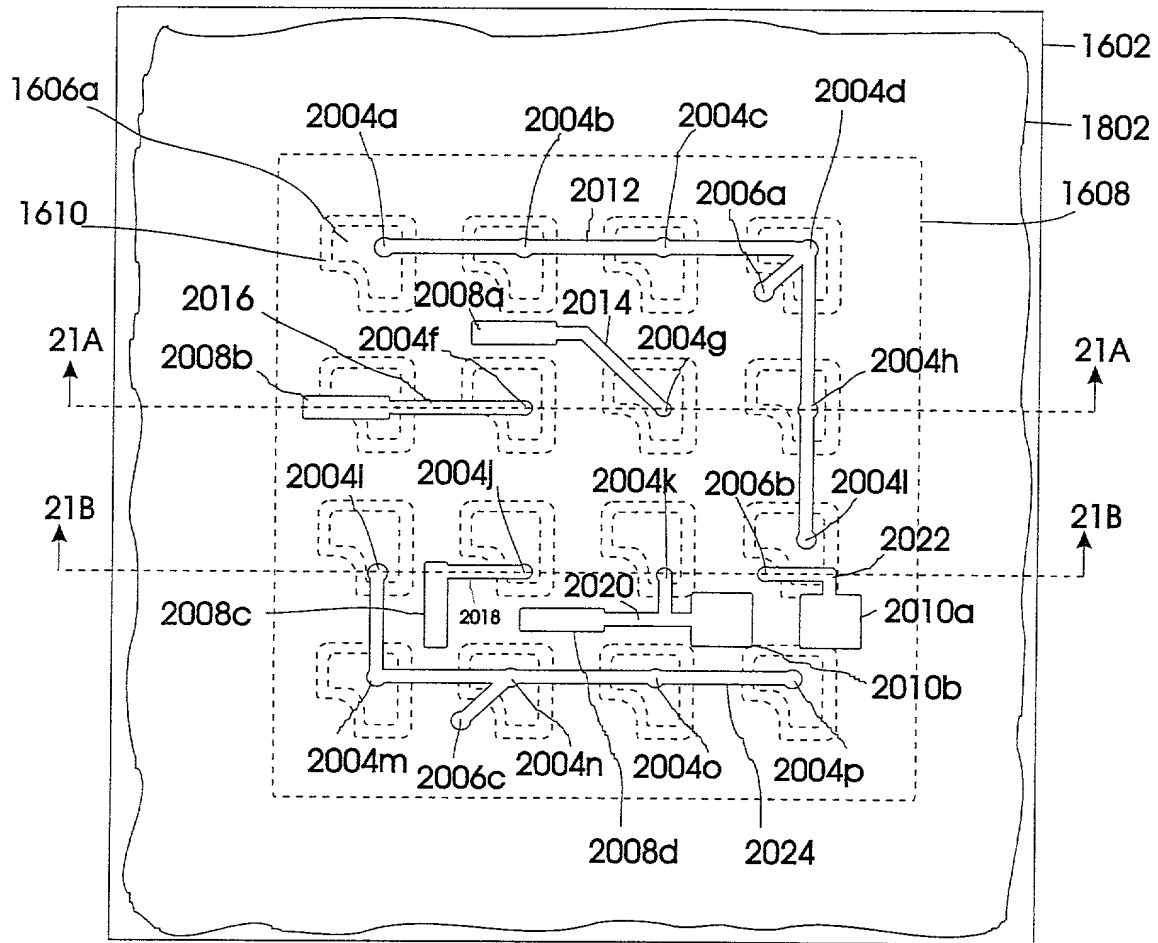


Figure 21A

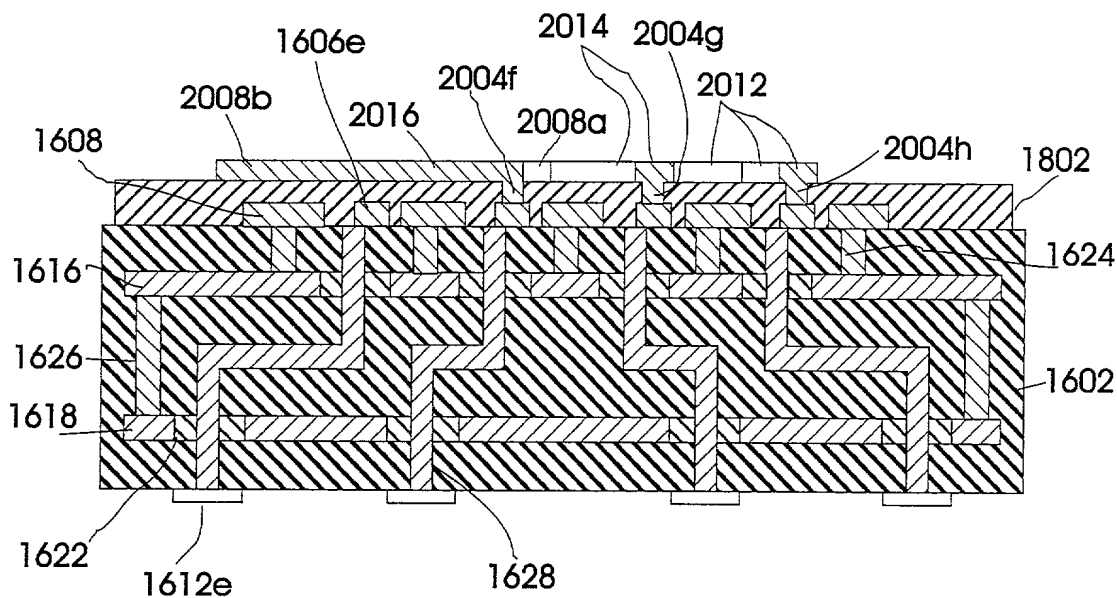


Figure 21B

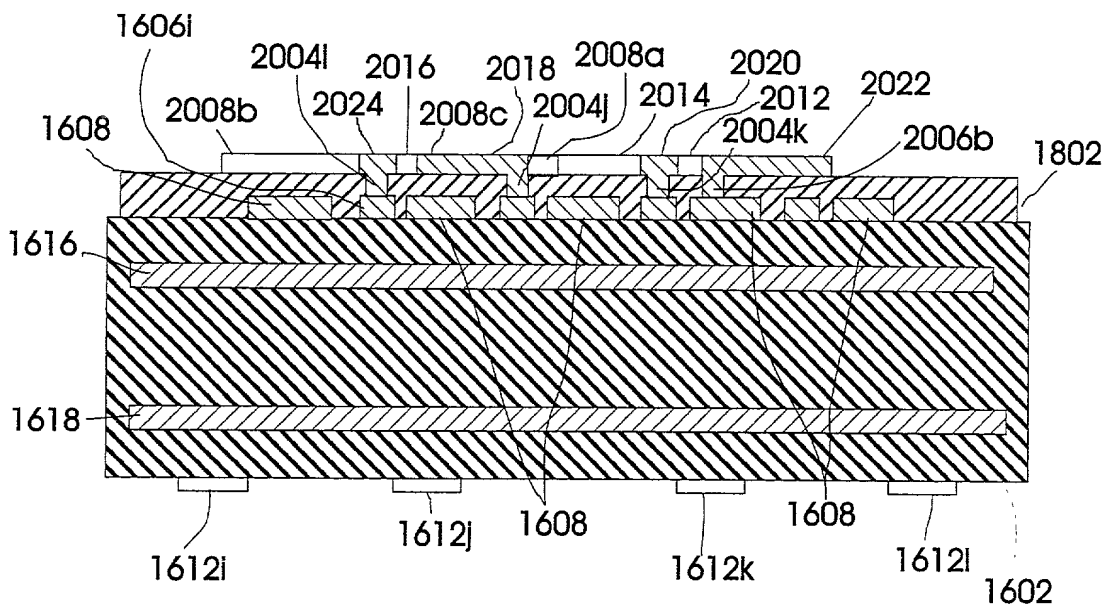


Figure 23

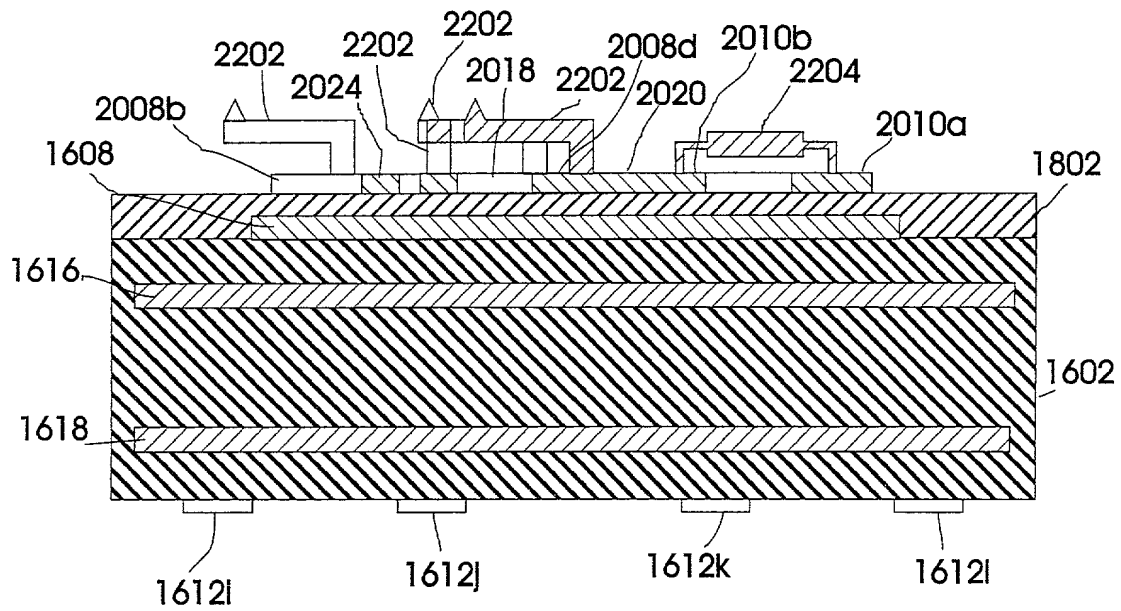
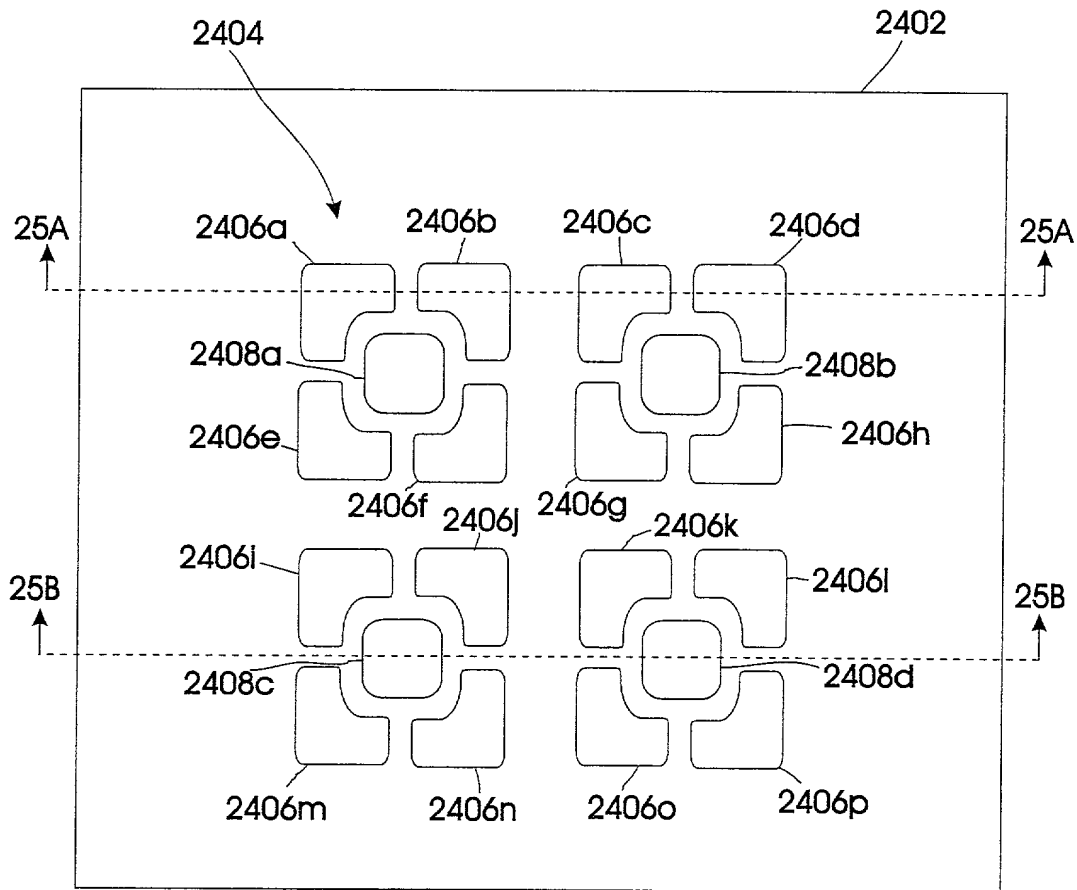


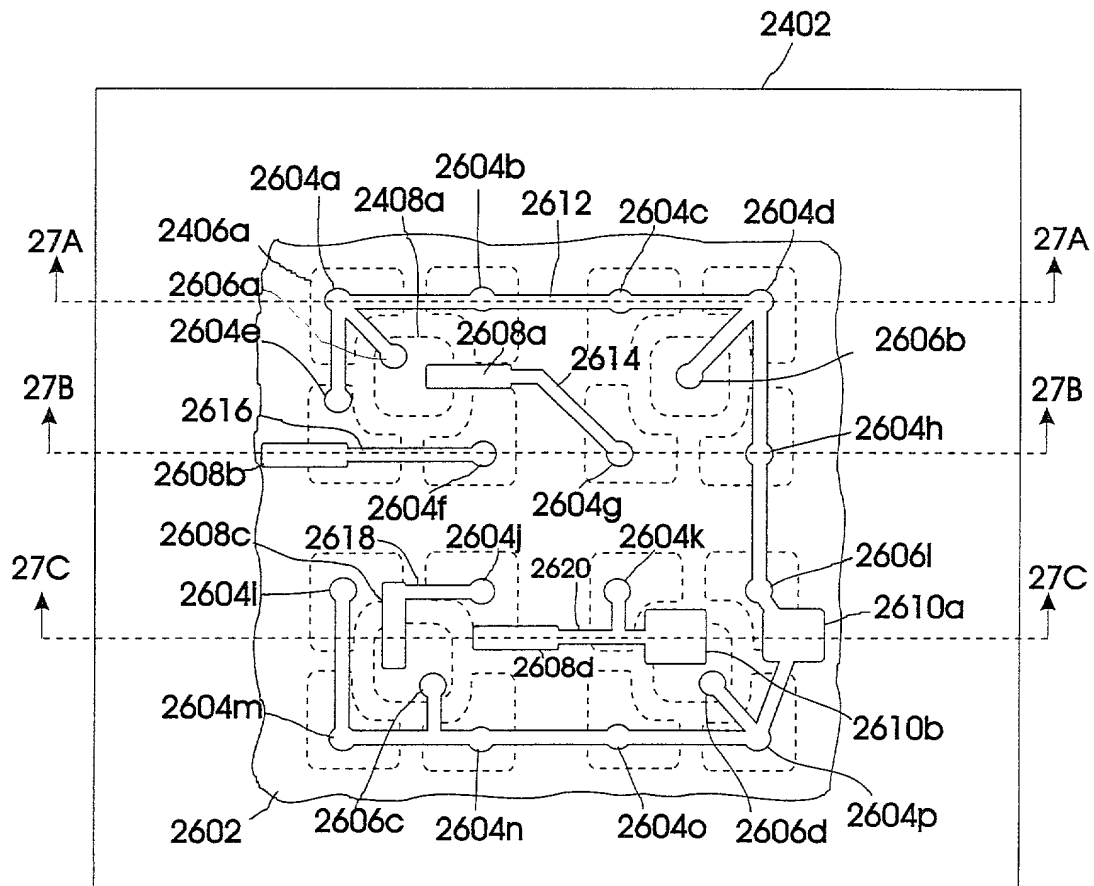
Figure 24



A cross-sectional view of a semiconductor device 2400. The device features a substrate 2402 with a top layer 2404. A series of gate structures 2406a, 2406b, 2406c, and 2406d are positioned on the top layer. Below the top layer, a series of vertical structures 2412a, 2412b, 2412c, and 2412d are formed. These structures are interconnected by horizontal layers 2416, 2418, 2420, 2422, and 2426. The bottom layer 2428 is also shown. The device is labeled 2400 on the right side.

[illegible]

Figure 26



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Figure 27B

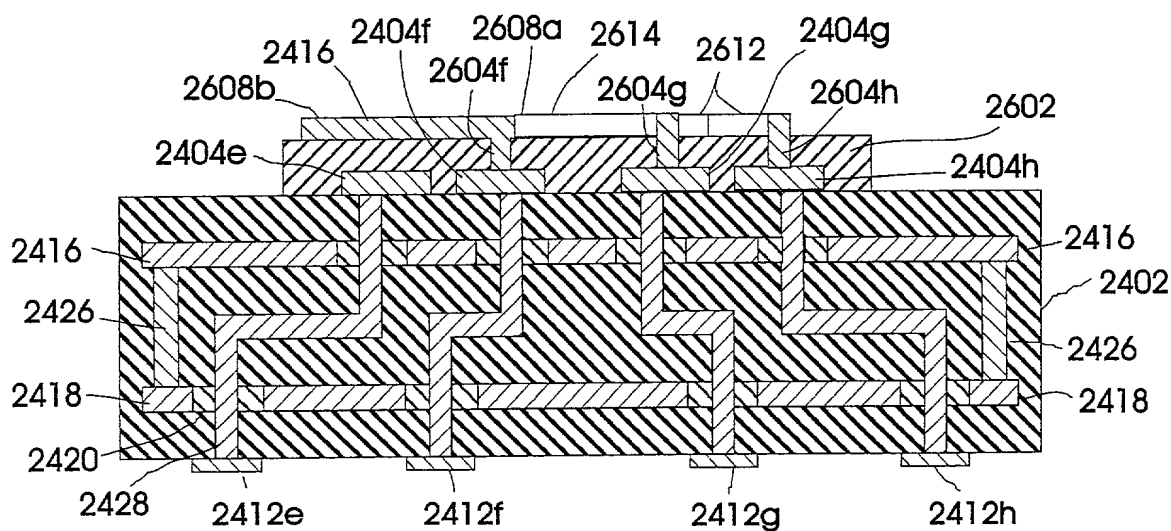


Figure 27C

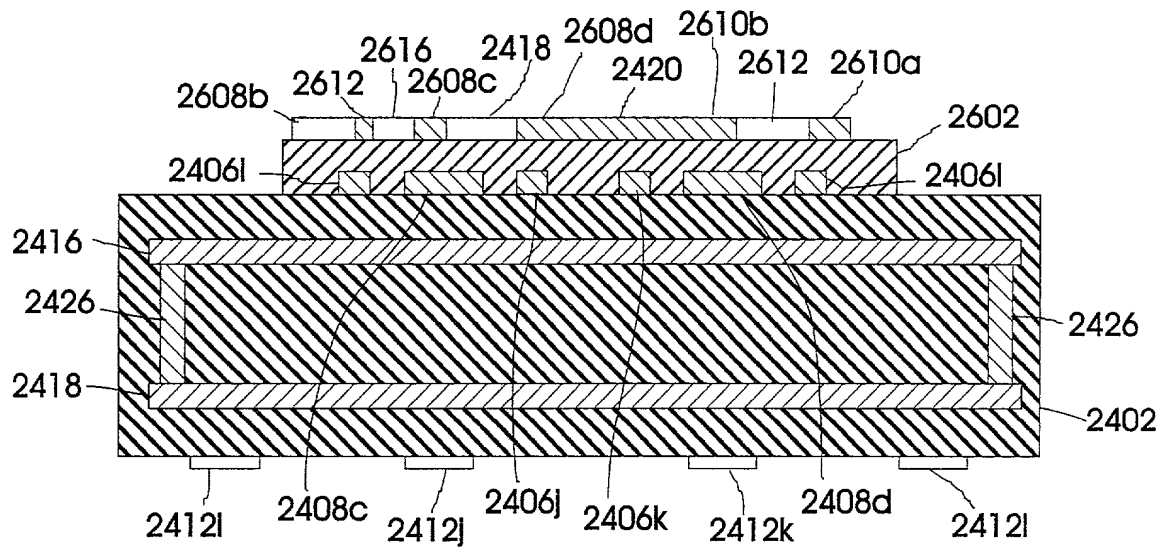
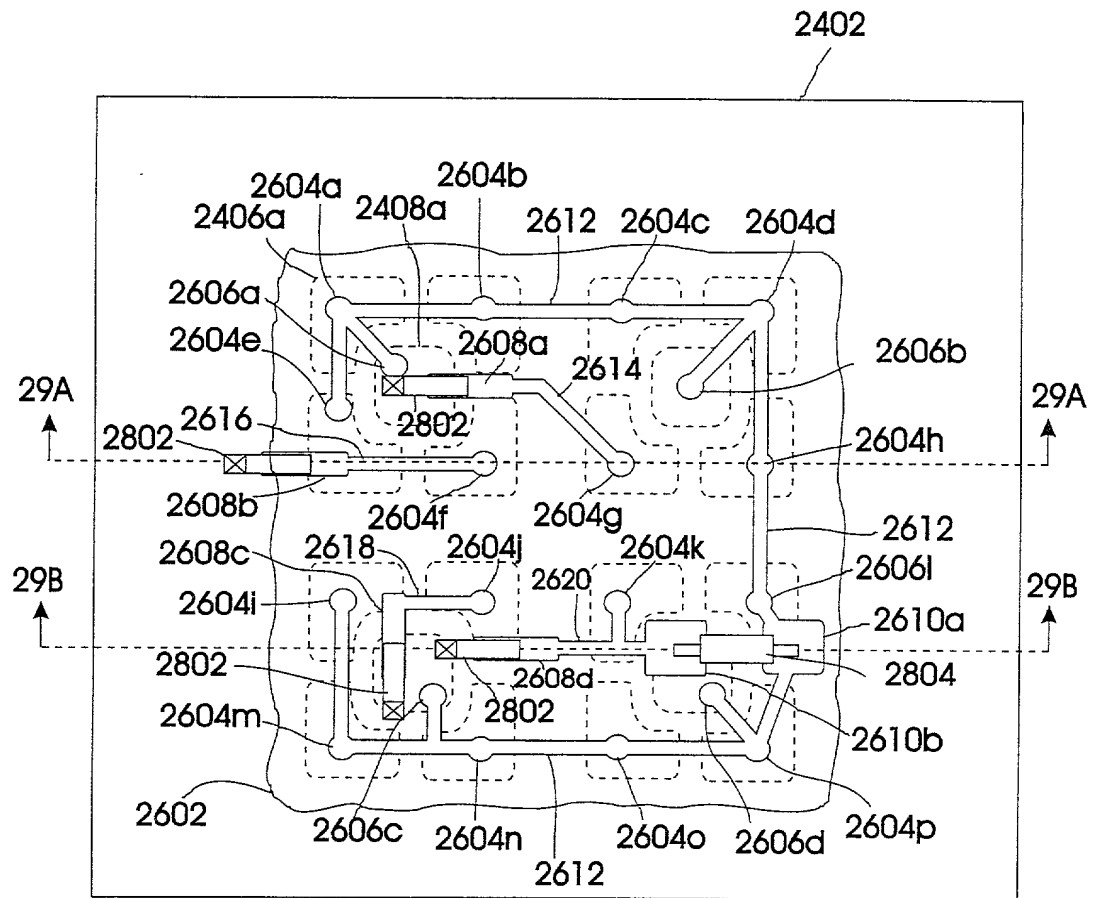
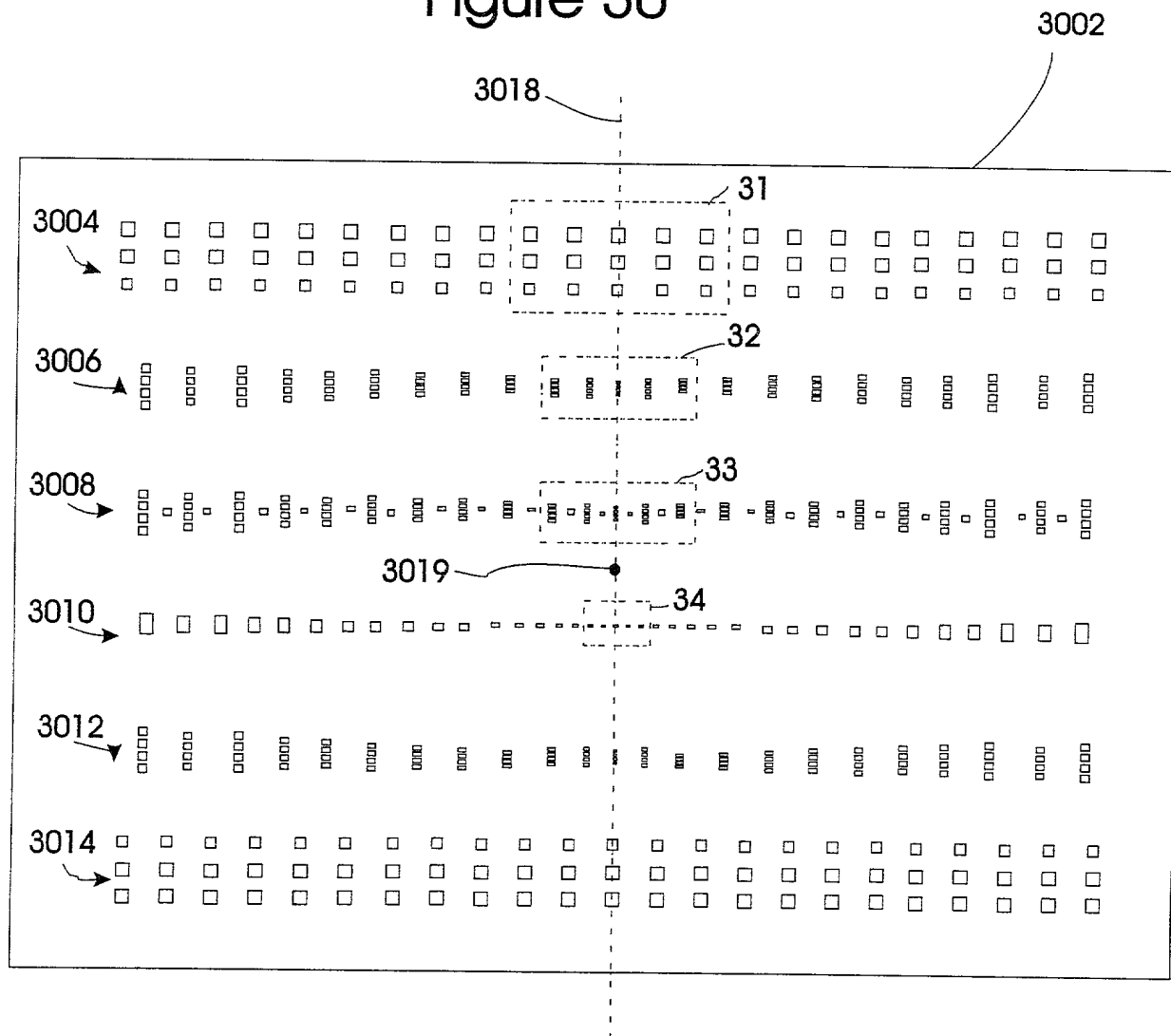


Figure 28



This cross-sectional view shows a semiconductor device with a substrate 2402. A first layer 2416 is formed on the substrate, containing a first pattern 2426. A second layer 2418 is formed on the first layer, containing a second pattern 2428. A third layer 2420 is formed on the second layer, containing a third pattern 2412e. A fourth layer 2412f is formed on the third layer, containing a fourth pattern 2412g. A fifth layer 2412h is formed on the fourth layer, containing a fifth pattern 2412h. A sixth layer 2404f is formed on the fifth layer, containing a sixth pattern 2404g. A seventh layer 2404h is formed on the sixth layer, containing a seventh pattern 2404h. An eighth layer 2602 is formed on the seventh layer, containing an eighth pattern 2604g. A ninth layer 2604h is formed on the eighth layer, containing a ninth pattern 2604h. A tenth layer 2608a is formed on the ninth layer, containing a tenth pattern 2608b. A eleventh layer 2608b is formed on the tenth layer, containing an eleventh pattern 2608c. A twelfth layer 2804 is formed on the eleventh layer, containing a twelfth pattern 2804. A thirteenth layer 2416 is formed on the twelfth layer, containing a thirteenth pattern 2416. A fourteenth layer 2426 is formed on the thirteenth layer, containing a fourteenth pattern 2426. A fifteenth layer 2418 is formed on the fourteenth layer, containing a fifteenth pattern 2418. A sixteenth layer 2420 is formed on the fifteenth layer, containing a sixteenth pattern 2420. A seventeenth layer 2412e is formed on the sixteenth layer, containing a seventeenth pattern 2412f. An eighteenth layer 2412f is formed on the seventeenth layer, containing an eighteenth pattern 2412g. A nineteenth layer 2412g is formed on the eighteenth layer, containing a nineteenth pattern 2412h. A twentieth layer 2404f is formed on the nineteenth layer, containing a twentieth pattern 2404g. A twenty-first layer 2404g is formed on the twentieth layer, containing a twenty-first pattern 2404h. A twenty-second layer 2602 is formed on the twenty-first layer, containing a twenty-second pattern 2604g. A twenty-third layer 2604h is formed on the twenty-second layer, containing a twenty-third pattern 2604h. A twenty-fourth layer 2608a is formed on the twenty-third layer, containing a twenty-fourth pattern 2608b. A twenty-fifth layer 2608b is formed on the twenty-fourth layer, containing a twenty-fifth pattern 2608c. A twenty-sixth layer 2804 is formed on the twenty-fifth layer, containing a twenty-sixth pattern 2804.

Figure 30



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Figure 31

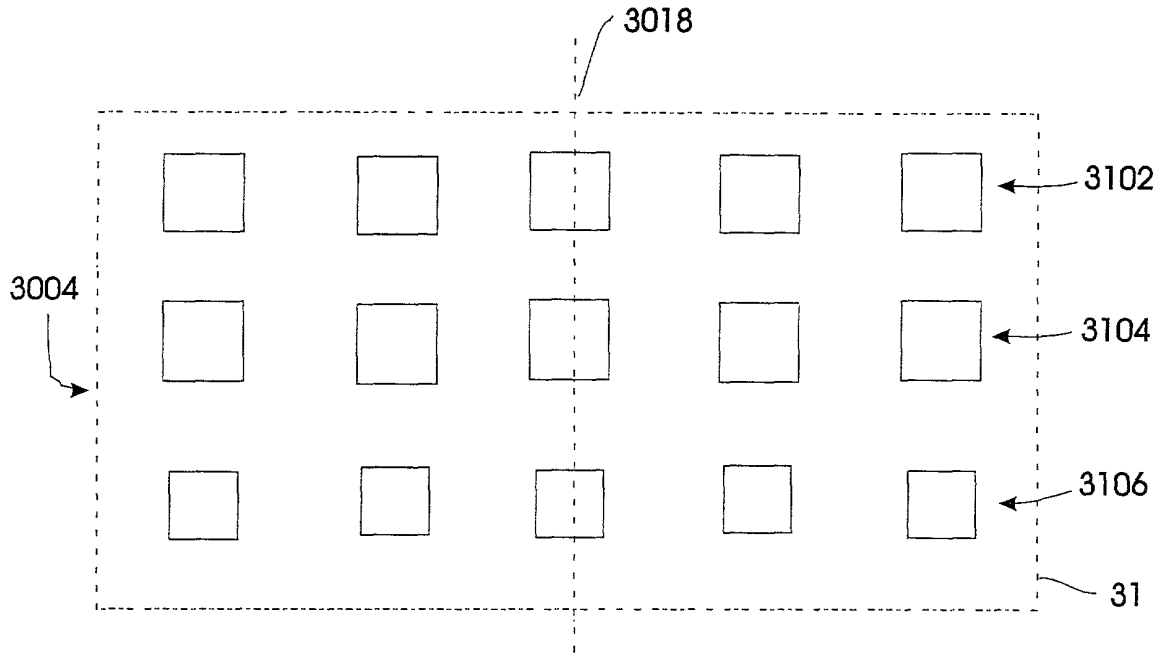


Figure 32

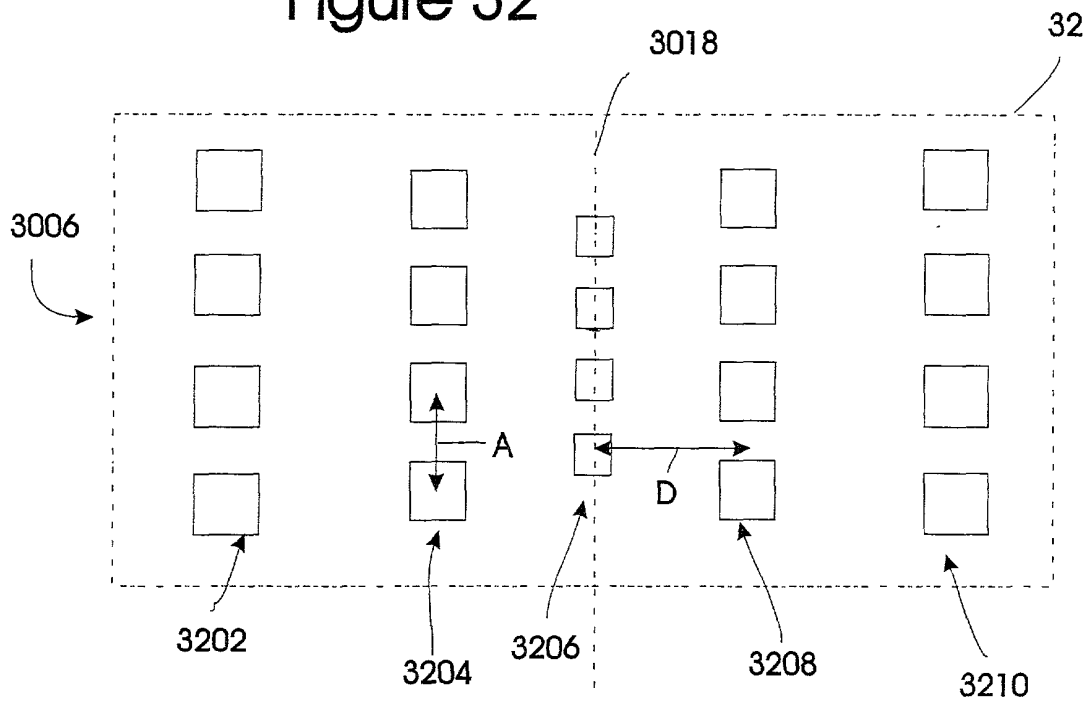


Figure 33

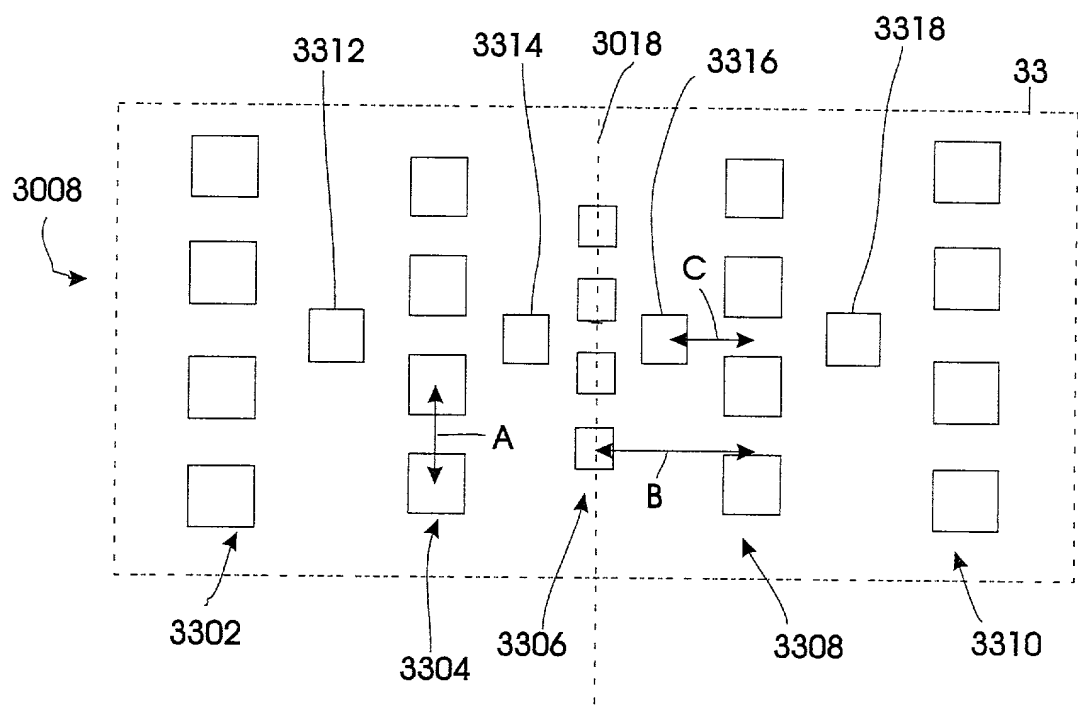


Figure 34

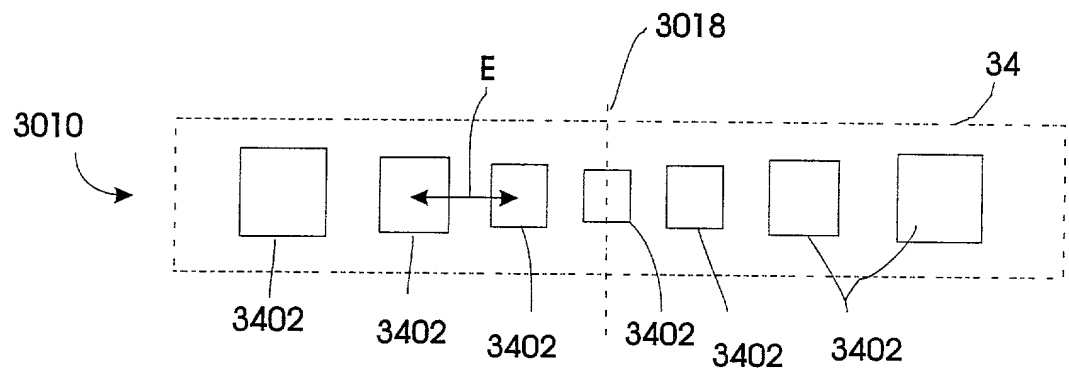


Figure 35

